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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/085,393 | 02/27/2002 | Chih Chiang Chang | | 6682 |

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EXAMINER

DOAN, JENNIFER

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 05/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/085,393

Applicant(s)

CHANG ET AL.

Examiner

Jennifer Doan

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4- 6 and 8 is/are rejected.
- 7) ☒ Claim(s) 3, 7 and 9 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings, filed on 02/27/2002, are accepted by examiner.

Specification

3. Applicants' cooperation is requested in correcting any errors of which applicants may become aware in the specification.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 5, 6 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Bergmann (U.S. Patent 6,198,567).

Regarding claim 1, Bergmann discloses (Fig. 1) a variable optical attenuator for attenuating optical signals transmitted from an input fiber to an output fiber comprising a rotatable mechanism between the input fiber and the output fiber (abstract, lines 1-3); and a refractor (12) mounted on and being rotatable with the rotatable mechanism which is driven to deflect light beams from the input optical fiber and then to couple part of the light beams into the output fiber, the refractor being rotatable to different angles to change the incident angle of the input light beams and then to output refracted light beams that are deflected from the axis of the input light beams as determined by the incident angle to continuously change the amount of the light beams into the output fiber (abstract, lines 1-3; column 1, line 55-column 2, line 21 and column 3, lines 2-42).

Regarding claim 2, further comprising two collimators (Fig. 1) for containing the input fiber (18) and the output fiber (20).

Regarding claim 5, wherein the refractor is a lens (Fig. 3 and column 5, lines 7-61).

Regarding claims 6 and 8, Bergmann disclose (Fig. 1) a variable optical attenuator comprising an input port (18) and an output port (20) facing to each other along an axial direction, the input port (18) including an input GRIN lens (14) and an input ferrule (column 5, lines 59-64) and the output port (20) including an output GRIN lens (16) and an output ferrule (column 5, lines 59-64); a refractor (12) having two parallel surfaces positioned between the input port (18) and the output port (20), the

refractor being rotatable about an axis perpendicular to the axial direction (column 2, lines 3-12); when the refractor (12) extends perpendicular to the axial direction, light from the input GRIN lens penetrates the refractor and substantially fully enters the output GRIN lens, while when the refractor is tilted relative to the axial direction with an angle different from ninety degrees, attenuation occurs (column 2, lines 3-42 and column 3, lines 2-40).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bergmann (as cited above) in view of Pan et al. (U.S. Patent 6,023,542).

Bergmann discloses the above features of the claimed invention except Bergmann does not disclose a holder to hold the rotatable mechanism and hold the two collimators in alignment with each other as recited in claim 4. However, a holder is well known in the art as taught by Pan et al. Pan et al. teach a holder (as shown in fig. 8, 43) to hold the rotator and collimators. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Bergmann's device with a holder (accordance with the teaching of Pan et al.). Doing so would keep the items together and prevent the device from falling apart.

Allowable Subject Matter

9. Claims 3, 7 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art fails to disclose or reasonably suggest a variable optical attenuator comprising a rotatable mechanism includes a fixing block and a rotatable post extending from the bottom of the fixing block as recited in claim 3; wherein the refractor has anti-reflective coatings covering the two parallel surfaces as recited in claim 7 and an attenuation formula as follows: $\text{Attenuation} = -10 \log \eta$ as recited in claim 9.

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Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Masuda et al. (U.S. Patent 5,315,431) and Pan et al. (U.S. Patent 6,023,542) disclose an optical isolator. Pan (U.S. Patent 5,276,747 and 6,181,846 and 6,195,479), Cheng (U.S. Patent 6,055,104), Han et al. (U.S. Patent 6,266,474), Kim et al. (U.S. Patent 6,441,944) and Takahashi (U.S. Patent 6,483,982) disclose an optical attenuator.

11. Any inquiry concerning the merits of this communication should be directed to Examiner Jennifer Doan whose telephone number is (703) 308-6179. The examiner can normally be reached on Monday to Thursday from 6:30am to 4:00pm, first Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick, can be reached on (703) 308-4819. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


AKM ENAYET ULLAH
PRIMARY EXAMINER

JD

JD

May 01, 2003